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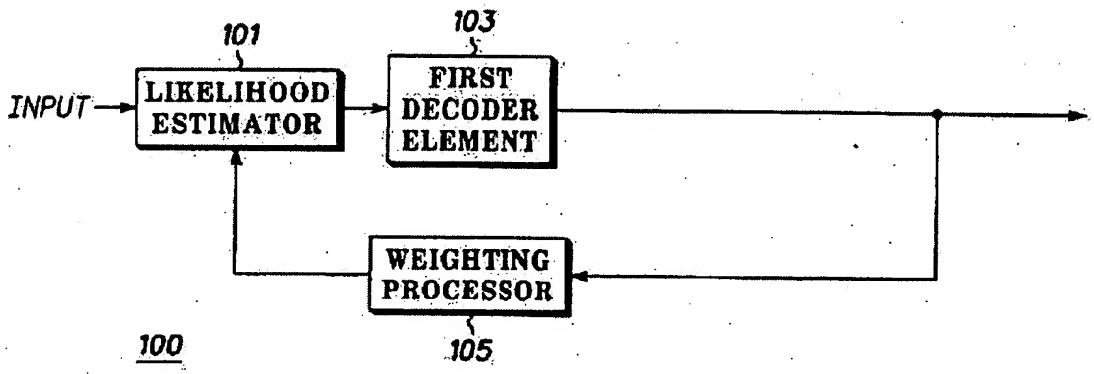
(54) Title: ITERATIVE DECODING WITH LIKELIHOOD WEIGHTING



(57) Abstract: The invention relates to an error correcting decoder apparatus (100) and method. The decoder apparatus (100) comprises a likelihood estimator (101) which generates a sequence of bit value likelihood estimates, such as log likelihood ratios, for multi bit symbols of a data sequence. The decoder apparatus (100) further comprises a decoder element (103), such as a Maximum A Priori (MAP) or appropriate Soft Output Viterbi decoder. The decoder element (103) generates a decoded data sequence in response to the bit value likelihood estimates. The decoder apparatus (100) also comprises a weighting processor (105) which generates a weighted compensation data sequence from the decoded data sequence. The weighted compensation data is used to modify the sequence of bit value likelihood estimates. The decoding is subsequently repeated using the improved bit value likelihood estimates whereby improved decoding performance is achieved. The invention may be applied to a two decoder element decoding apparatus (200) and may specifically be applied to turbo decoders.

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